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ABSTRACT

Reliable institutional research is seen as serving as a valuable means of generating accurate, objective data useful in reaching sound management decisions in institutions of higher education. Institutional research is defined as the systematic, comprehensive self-study used by a college or university to improve the institution. Sound institutional research provides empirical information on student demographics, student growth, learning processes, educational practices, environment and community involvement within an academic institution. Staff, faculty and administration personnel can provide input on issues and problems of mutual concern by filling out questionnaires or analyzing records. It is suggested that a program/activities checklist for institutional researchers should cover such general topic areas as administration, admissions and enrollment, curriculum, faculty, finances, goals and objectives, instruction, students and public relations and development. Data assessment tests should generate separate sets of descriptive and inferential statistics. In formulating self-assessment tests for any academic institution, institutional researchers may initiate any or all of the following data collection methods: before-and-after evaluations, correlation studies, interviews, inventories, observer schedules, parallel samples surveys, opinionnaire polls, rating and ranking schedules, statistical data compilations and sample tests. A list of references is included. (DC)

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INSTITUTIONAL MANAGEMENT, INSTITUTIONAL RESEARCH:
AN ESSENTIAL PARTNERSHIP IN HIGHER EDUCATION

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The press for educational accountability cannot be put off ! Increasingly there are demands for evidence to support the high aims claimed by educators. Today even the most ardent proponents of higher education recognize the critical need for a firmer base of data that would result from empirical study of their stated goals and educational philosophy.

The pragmatic answer to the question - "Why institutional research?" is that increasing numbers of higher education institutions are learning to find, through such research, ways and means of identifying and analyzing their problems. Thus, through better understanding, they take the first major step toward improving their current programs and operations, as well as planning intelligently for the future.

In the final analysis, institutional research functions as a stethoscope, for it permits one to 'listen in' on the vital organs of the college. It is axiomatic that no one can take the ultimate weight of decision-making from the shoulders of management personnel. However, the more management knows of how things really are, the lighter the burden can be. Thus - institutional research can serve as a valuable means for generating accurate, objective data useful in reaching sound management decisions.

"An institution of higher learning that stops growing, improving, implementing, and evaluating is a danger both to society and to itself. What right does an institution have to exist when it no longer gives its best in attempting to cope with the increasing complexities of the society it serves? What hope is there for a faculty, either administrative or teaching, that has stopped growing?" (Roesch & Boggs, 1968)

OVERVIEW

Today, most educators would agree that their primary dual objectives are:

(1) to help develop self-disciplined, responsible and thinking citizens for a free society, and (2) to serve as facilitators, assisting individuals to achieve their maximum fulfillment and self-realization. Unfortunately, there is less agreement regarding how best to accomplish these challenging tasks.

In addition, recent years have seen a growing public insistence for accountability within higher education. Increasingly there are demands for evidence to support the high aims claimed. Even the most ardent of proponents of higher education now recognize the critical need for a firmer base that would come from empirical study of their goals and educational philosophy.

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This press for accountability cannot be put off. Individual institutions must respond, for the alternative to effective management, including objective self-evaluation, is submission to interests beyond the college. It is this insistent demand for accountability which gives critical impetus to the role of institutional research (IR) which serves as a vital partner for institutional management in higher education.

INSTITUTIONAL RESEARCH FUNCTIONS

To paraphrase Arthur Cohen, Director of the ERIC Junior College Clearinghouse, University of California - Los Angeles, IR is a problem-oriented activity, directed toward providing data useful or necessary in making administrative decisions as well as helping to insure successful maintenance of college operations. Sometimes IR is called applied operations research, for at best, it is. In the final analysis, IR is the systematic, comprehensive self-study by a college designed to improve the institution.

A college must systematically question the results of its efforts. It must continuously analyze its approaches, methods, and programs, to insure the best possible education for its students. Thus, IR, as a staff-service function, grows out of the need to obtain objective data necessary to reach intelligent, informed decisions regarding the management and operation of the institution. In short - the primary objective of IR is to increase managerial effectiveness.

In sound programs of IR, conducted systematically and on a continuing basis, there is much of potential value. Such research can provide information about: (1) students; i.e. demographic characteristics; areas of growth and development; academic achievement, etc. In this connection it is well to note that the student, what he is, what he experiences, what he becomes, is a centrality for much of IR. Such inquiries provide facts for understanding, managing and/or changing educational practices. In the final analysis, planned

education consists of contrived learning experiences, and by means of IR one can take a more active and conscious part in the contrivance.

Sound IR can also provide information regarding: (2) learning processes; (3) educational practices; (4) the institutional environment, to help determine the effectiveness of the various academic and academic-collateral programs which comprise the operations of the college; and (5) the community impact of the institution.

Properly utilized in the decision-making process, research data so generated will enable the institution to more fully (i.e. more effeciently) utilize its manpower, money, methods, and materials resources. In addition, long-range planning can be materially improved through the utilization of research-developed data upon which sound projections and forecasts may be based.

Equally significant, the absence of 'good' research-based information can result in the use of linear, status quo projections of growth and change. This can lead to absurd or economically unsound estimates of quantitative measures often essential for sound planning. In essence - by becoming directly involved in filling information gaps, IR is relevant to all problems, concerns, and operations

In a well-organized IR effort, the on-going self-evaluation activities are shared by staff, faculty, and administration. When the researcher and user of research information interact collaboratively, thereby stimulating each others problem-solving behavior, this helps to insure successful linkage between IR effort and educational operations. Within the total research effort, some of the activity is directed to decision-oriented inquiries and some to conclusion-oriented concerns. In the former type, the problem or inquiry is defined by the appropriate decision-maker; i.e. the president; staff member; administrator; or faculty member. Consequently, the research investigator conducts his decision-oriented study within the framework of the decision-maker's judgement.

As I noted in another document: "In any program of sound research, it will be:

- (1) based upon theory and, when available, previous research findings.
- (2) ingenious, creative, and timely.
- (3) rigorously and carefully conducted with due respect to the importance of control, and
- (4) identified as having rigorous standards to follow in order to insure that the research design tests the hypothesis it sets out to test, not something else !" (Blai, 1970)

For convenience, IR methods may be grouped under three broad rubrics:

(1) Survey Research:

This type of investigation may include the collection of data by questionnaires, analysis of records, and interviewing either specific samples or total populations.

(2) Experimental Research:

These procedures involve the manipulation of selected variables and the use of experimental and control groups to study the effects of such manipulations upon selected criterion variables.

(3) Historical Research:

This involves the use of historical data to answer specific questions, by attempting to research historical records to secure valid and reliable information through careful examination and statistical treatment of the data.

Utilizing the above methods, sound research makes carefully formulated hypotheses, (i.e. tentative generalizations regarding fundamental relationships, or perhaps they may be tentative solutions to existing problems which serve to guide the thrust of the research effort). There are, of course, two types of hypotheses: (1) statistical null hypothesis. This states that any difference or departure from normal, or other predetermined state, can be attributed to sampling errors. If the difference or departure is greater than one would expect by chance, the null hypothesis is rejected. One may then look

to the second type of hypothesis: (2) the non-statistical, descriptive hypothesis. This is simply some tentative formulation about causes, relationships, or possible solutions to posed problems.

The functional or practical utility of IR depends upon: (1) the technological adequacy of the instruments used, and (2) the specific methodological design of the study. Such design should include:

- (a) Careful statement of hypothesis.
- (b) Careful determination on selection of individuals and/or records contributing the data to be collected.
- (c) The application of appropriate statistical techniques to the data collected. (This is the very critical step of data quantification to more readily permit the drawing of conclusions).

With reference to statistics, there are two broad types which are useful for data assessment. These are:

(1) Descriptive statistics. These include the various methods for summarizing and communicating results - such as statistics from samples which describe specific characteristics of data. They may serve also to summarize important aspects of controlled observations of individuals, or analysis of records; i.e. measures of central tendency (the mean, mode, or median), measures of variability (standard deviation, average deviation), and degrees of interacting relationship between two or more items of data (coefficients of correlation and coefficient of variation).

(2) Inferential statistics. These involve the making of generalizations from a given set of observations to a larger set of potential observations.

IR PROGRAM CHECK-LIST

In order to insure that the IR program is as comprehensive as is economically feasible, it is quite useful to develop a program/activities check-list. This serves to broadly delineate the range of topics to be included in an

on-going, self-evaluation assessment program. An additional benefit to be derived from such a list is that it will clearly spell out and give direction to the scheduled, cyclical research inquiries conducted in connection with long-range trends analysis and planning, as well as the on the spur of the moment queries conducted for immediate decision-making purposes.

The first check-list area is Administration . This includes such subjects as self-evaluation, district organization, policy development, staffing, year-round operation, committee organization, personnel services - student and staff, articulation with business-industry, articulation with high schools, articulation with transfer students, calendar development, catalog structure, questionnaires, regulation and instructions, reporting procedures, and summer/evening sessions.

The second area is Admissions & Enrollment. Representative activities here include: admissions counseling procedures, the admissions process, enrollment projects, placement test validity as predictors of success, probation, course enrollments, and course selection procedures.

Area three includes the Curriculum. Various dimensions here may include: curriculum evaluations and revisions, curricular needs, remedial programs, honors programs, program evaluation, and library.

Area four is Faculty. Included here are such items as: inservice training, academic rights, faculty assessments, and teacher load.

Area five involves Finances. This includes such items as: budgets, unit costs, and compensation plans.

Sixth is Goals & Objectives. Such areas as the college's image, educational philosophy and specific educational objectives are assessed here.

Seventh is Instruction. Focus here is directed to: instructional effectiveness, class size, programmed instruction, and space utilization.

Eighth is Public Relations & Development. Included here are community publications and other contacts, special events, fund-raising, and alumni relations.

Ninth is Students. Modifications in student behavior, attitudes, and values are assessed through: follow-up of transfer students, subsequent success of students, multi-dimensional analyses of student populations before-and-after their educational 'exposure', student activities assessments, records of student-body stability (i.e. 'dropouts'), student employment, and student study habits.

Within the fabric of the total IR program, planning for educational self-renewal through long-range IR effort is an integral element. To help insure that students might have more and better opportunities to learn, the institution should seek to generate and maintain on a continuing basis, such capacity for self-renewal. Through the modification of existing programs it can seek to adapt to change. In the words of former U.S. Commissioner of Education, James Allen - "Such educational self-renewal seeks to change attitudes; to throw off inhibiting tradition; and to be willing to experiment and explore new methods and directions." Such self-renewal efforts, coupled with the related research activity of generating data to help solve immediate concern problems, serve as complementary elements of a total, timely IR effort.

IR METHODS

If a college is to avoid the twin pitfalls of complacency and misdirection, institutional self-study is an absolute necessity. Such self-study is facilitated by IR, the essential elements of which include:

- (1) Careful formulation-statement of problem.
- (2) Meticulous definition of both technical and non-technical terms.
- (3) Careful formulation of hypotheses.
- (4) Careful selection of population or sample for investigation.
- (5) Careful attention as to how the data are collected.

(6) Accurate analysis of data.

(7) Conclusions: carefully formulated inferences or generalizations.

The principal IR techniques and methods utilized as data collecting devices include:

(1) Before-and-after evaluations; (2) Check lists; (3) Correlation studies; (4) Interviews - both structured and open-ended; (5) Inventories - both personality and skills; (6) Observer schedules; (7) Parallel-samples surveys; (8) Questionnaire and opinionnaires; (9) Rating and ranking schedules; (10) Statistical treatment of records data; and (11) Tests.

The dissemination of written reports, memoranda, etc. relating to IR findings should, of course, be as extensive as is economically feasible. In general, there are a minimum of ten 'publics' who should receive selected IR documents appropriate to their spheres of responsibility and/or interest. These are:

(1) Faculty (6) Alumni

(2) Administration (7) Students' parents

(3) Staff personnel (8) Incoming freshmen

(4) Students (9) High school guidance personnel

(5) Board of Trustees (10) General academic community and, upon request, other interested individuals.

IR AND PLANNING

What is the role of IR in the collegiate planning process? First, and foremost, its role is that of providing data upon which decisions may be based. IR is a staff, service function, not a line management, decision-making function. True, any institutional researcher worth his salt must be a motivating force, by encouraging and initiating experimentation and research. To be an effective staffer, he must also have an assessment or evaluation function as well as a research function. In all, he must do more than just stir up trouble !

As I noted in another article:

"Specific strategies are now being employed to cope with the tremendously rapid changes in education. An essential prerequisite for coping effectively with such changes is the function of long-range planning. A helpful partner in conducting such planning is institutional research which, through its systematic self-study inquiries, can help to assess how well the institution is achieving its goals and objectives." (Blai, 1978)

It has been suggested that an effective institutional researcher must be more than Vice-President in charge of heresy! In the area of planning and perfection, he must be prepared and willing to aid; for he is a facilitator, a catalyst, not a line-management decision-maker. Per se, the institutional researcher is not an administrator, and if his work within the college is to be accepted without suspicion or hostility, he must not act in such a way as to preempt, or appear to preempt, the decision-making prerogatives of administrators.

Although the potential influence of sound IR is great, college presidents and faculty committees will not be replaced nor diminished by IR activities. On the contrary, IR can only exist when created and nurtured by presidents and faculties. By specifying the boundaries and objectives for the work of the IR specialist, college leaders, through the selection of suitably qualified researchers, can provide themselves with a valuable data-resource to help facilitate their burdens of decision-making.

How best then may IR serve the executives and managers of academe? Nevitt Sanford claims that what is needed is theoretically-oriented, long-term studies of educational institutions. He believes the institutional research agency should deal in pure research, and should be relatively independent of the host institution. On the other hand, John Dale Russell would like to see IR attached directly to the office of the president. It would work toward improving both the quality and quantity of objective data for decision-making, and be primarily concerned with ways and means of saving money. My own view is that either approach, alone, is a sterile one. Solving immediate problems is an on-going

management requirement, and problem-oriented research is certainly of practical value. But such research, uninformed by theory, ultimately goes nowhere. Problem-solving research, almost by definition, pays little or no attention to the fundamental purposes of the institution, or the value systems that control it. However, institutional research that is entirely theoretical may result in theories detached from the institutional realities; it may not be understood or accepted, and may lose touch with the reality dimension of - "we must reach a sound decision to solve this problem - now!"

Specifically then, IR in its relationship to management planning is to work closely and cooperatively with those assigned primary responsibility for planning and policy formation, for in doing so, it helps to achieve its primary goal - to enhance academic and administrative practices. If, however, IR is called upon to take an active role in the actual planning and deliberations processes, a word of caution is in order. Some researchers fail to extricate themselves at the proper stage of the planning process. They do not recognize the problems associated with trying to be both an objective evaluator and committed implementer.

It is true that institutional researchers and institutional planners share many common attributes - and are equally concerned with the mission of the college. But, unless the researcher stops short of implementation in the planning process, he relinquishes his influence as an objective evaluator, and he assumes a partisan role which may well weaken his effectiveness in future efforts.

Although institutional research may involve application of management science principles; systems analysis; records management; computer programming; or numerous other essential, technical functions, in its concern with management planning and goals formulation it cannot be limited to applications of methods or technical expertise, untempered by considerations of educational values. Although such techniques are important, developments in psychology, economics, and sociology, to cite but a few obvious disciplines, could be of equal or even

greater importance in reaching a sound decision in terms of the primary criterion for all educational effort: what is best for the education of the student?

We believe it reasonable to conclude that management planning and IR are not identical functions. Planning focuses upon goals and purposes, and the methods for achieving them, and it typically requires committee work with philosophical and policy dimensions, along with quantitative considerations. In contrast, IR collects, analyzes, interprets, and reports information.

Based upon this distinction, IR is often viewed as a vital resource for management planning. Among its several activities, it provides quantitative, data-based information and interpretation required in the planning process. Hopefully, an established IR activity can make available applicable portions of the information required at the time a management planning effort is initiated. In fact - it may well be that planning should become the focal point for IR effort; and it may not be too extreme to suggest that the influential IR organization of the future will be those that are concerned with management planning, and constantly test the probable effects of pending decisions.

CONCLUSIONS

It is axiomatic, but nonetheless pertinent to note, that without the wholehearted endorsement and active support of executive management, IR is either an impossibility or simply a meaningless, wasteful window dressing. Someone once said that a budget is the most important statement of a college's educational policy. By the same token, the financial support of IR should not be left to chance. If such a program is considered important, specific and realistic provision must be made for it within the college budget so that freedom of inquiry and follow-up of research findings may be accomplished.

Organizationally where should the IR office 'fit' ? Succinctly stated... "virtually any location within the institution, save perhaps the president's office, is counterproductive to, and a constraint on, the practice of institu-

tional research. If institutional research reports to the chief financial officer of the institution, it will suffer because it is too oriented to budgetary and financial analysis; if institutional research reports to the vice president for academic affairs, it may not have the appropriate perspective on the fiscal affairs and financial health of the institution." (Wallhaus, 1979)

Numerous management specialists have suggested that education, like industry, should ask many searching questions of itself. However, the question of research priorities can too easily be misdirected. As Alan Gross notes: "Whatever the research priorities, one thing is clear; research itself is not necessarily the researchers top priority. Much of his time is taken up by the tedious work of answering and routing questionnaires, coordinating information with state and federal agencies... and collecting and interpreting routine data." (Gross, 1977)

And finally, as L.E. Saunders has so realistically observed,

"Institutional governance is sometimes characterized as organized anarchy, with executives moving from one crisis to another, with little or no time for reflection, planning, or studied decision making. Failure of the institutional research analyst to respond quickly in such a setting usually results in the executive turning to someone else for answers." (Saunders, 1979)

This observation by Saunders about described the realities of what an institutional researcher can usually expect. It is a fact of life in academe which can, perhaps, best be characterized by former president Harry Truman's comment about work pressures: "if you can't stand the heat, get out of the kitchen".

One final IR aphorism: Waste makes Waste! Most innovative programs in education, including IR programs, have been plagued by the tendency of both observers and participants to want immediate, visible results. We suffer from the habit of pulling up the plant by its roots every few months to see if it is alive and growing? Resist that anxious urge; set reasonable target dates and then patiently insist that they not be tampered with!"

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